

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. APPLN. NO. 09/729,177
ATTORNEY DOCKET NO. Q61789

REMARKS

Applicants request that the Examiner acknowledge Applicants' claim to foreign priority, and for indicating that the certified copy of the priority document, European Patent Application No. 99403062.5 dated December 6, 1999, has been made of record in the file.

Claims 1-15 have been examined on their merits.

The amendments to claims 2-5 were made merely to more accurately claim the present invention and do not narrow the literal scope of the claims and thus do not implicate an estoppel in the application of the doctrine of equivalents. The amendments to claims 2-5 were not made for reasons of patentability.

Claims 1-15 are all the claims presently pending in the application.

1. Claim 1 stands rejected under 35 U.S.C. § 112 (2nd para.) as allegedly being indefinite due to a minor antecedent basis error. Applicants herein amend claim 1 to remove the antecedent basis error, and request that the § 112 (2nd para.) rejection of claim 1 be withdrawn.

2. Claims 1-3, 6 and 7 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Amrany *et al.* (U.S. Patent No. 6,281,829) in view of Hewinson *et al.* (U.S. Patent No. 6,288,883) and in further view of Treiber (U.S. Patent No. 4,386,430). Applicants traverse the rejection of claims 1-3, 6 and 7 at least for the reasons set forth below.

The initial burden of establishing that a claimed invention is *prima facie* obvious rests on the USPTO. *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). To make its *prima facie* case

of obviousness, the USPTO must satisfy three requirements:

- a) The prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated to artisan to modify a reference or to combine references. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988).
- b) The proposed modification of the prior art must have had a reasonable expectation of success, as determined from the vantage point of the artisan at the time the invention was made. *Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1209 (Fed. Cir. 1991).
- c) The prior art reference or combination of references must teach or suggest all the limitations of the claims. *In re Vaeck*, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991); *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970).

The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, the nature of a problem to be solved. *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). Alternatively, the motivation may be implicit from the prior art as a whole, rather than expressly stated. *Id.* Regardless of whether the USPTO relies on an express or an implicit showing of motivation, the USPTO is obligated to provide particular findings related to its conclusion, and those findings must be clear and particular. *Id.* A broad conclusionary statement, standing alone without support, is not “evidence.” *Id.*; *see also, In re Zurko*, 258 F.3d 1379, 1386 (Fed. Cir. 2001).

In addition, a rejection cannot be predicated on the mere identification of individual components of claimed limitations. *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000). Rather,

particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *Id.*

The Examiner acknowledges that the combination of Amrany *et al.* and Hewinson *et al.* does not disclose measuring a transmission return loss gain in order to control tunable passive elements so as to reduce the transmission return loss gain. See page 3 of the February 9, 2004 Final Office Action. The Examiner alleges that the disclosure of Treiber overcomes the acknowledged deficiencies of the combination of Amrany *et al.* and Hewinson *et al.*

With respect to claim 1, the combination of Amrany *et al.*, and Hewinson *et al.* and Treiber fails to teach or suggest a method of adaptive echo canceling, wherein tunable passive elements in a hybrid are tuned via a digital means in order to reduce a transmission return loss gain based on measured input and output transmission voltages. Treiber discloses, *inter alia*, a formula for measuring based on two impedances, neither of which is remotely similar to the tunable elements of the present invention. See Figure 1, col. 4, lines 22-26 of Treiber. There is no disclosure in Treiber of measuring the input and output transmission voltages of a hybrid (10) in order to determine a transmission return loss gain. Thus, Applicants submit that the Examiner cannot fulfill the “all limitations” prong of a *prima facie* case of obviousness, as required by *In re Vaeck*.

Since neither Amrany *et al.*, Hewinson *et al.* or Treiber disclose a tunable passive elements in a hybrid are tuned via a digital means in order to reduce a transmission return loss gain based on measured input and output transmission voltages, Applicants submit that one of

skill in the art would not be motivated to combine the three references. *In re Dembiczak* and *In re Zurko* require the Examiner to provide particularized facts on the record as to why one of skill would be motivated to combine the two references. Without a motivation to combine, a rejection based on a *prima facie* case of obviousness is improper. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998)). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308 (Fed. Cir. 1999). The Examiner must make specific factual findings with respect to the motivation to combine references. *In re Lee*, 277 F.3d 1338, 1342-44 (Fed. Cir. 2002). Although the Examiner claims that minimizing transmission return loss gain is the motivation for combining the three references, Amrany *et al.*, Hewinson *et al.* and Treiber lack any teaching about the desirability of a digital control means that sets the values for tunable passive elements in a hybrid to reduce transmission return loss gain based on measured input and output transmission voltages. Since Amrany *et al.* barely discusses echo cancellation, why would one of ordinary skill in the art add the transconductance bridge of Hewinson *et al.*, with all the attendant extra components and circuit complexity, to the circuit of Amrany *et al.*? Furthermore, why would one of skill in the art include the disclosure of Treiber, when Treiber clearly discusses the limitations of the circuit shown in Figure 1? *See* col. 4, lines 22-40 of Treiber. Applicants submit that the Examiner cannot fulfill the motivation prong of a *prima facie* case of obviousness, as required by *In re Dembiczak* and *In re Zurko*.

Based on the foregoing reasons, Applicants submit that the combination of Amrany *et al.*, Hewinson *et al.* and Treiber fails to disclose all of the claimed elements as arranged in claim 1,

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and included via dependency in claims 2 and 3. Therefore, the combination of Amrany *et al.*, Hewinson *et al.* and Treiber clearly cannot render the present invention obvious as recited in claims 2 and 3. Thus, Applicants submit that claim 1 is allowable, and further submit that claims 2 and 3 are allowable as well, at least by virtue of their dependency from claim 1. Applicants respectfully request that the Examiner withdraw the § 103(a) rejection of claims 1-3.

Independent claim 6 has similar recitations as independent claim 1, namely, a hybrid bridge comprising tunable passive elements that are tuned by a digital control means in order to reduce transmission return loss gain, wherein the transmission return loss gain is measured from input and output transmission voltages. Applicants submit that claim 6 is allowable for at least the same reasons as claim 1, in that the combination of Amrany *et al.*, Hewinson *et al.* and Treiber fails to teach or suggest the digital control means for the tunable passive impedances and controlling the transmission return loss gain. Applicants further submit that claim 7 is allowable as well, at least by virtue of its dependency from claim 6. Applicants respectfully request that the Examiner withdraw the § 103(a) rejection of claims 6 and 7.

3. Claims 4, 5, 8, 14 and 15 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Amrany *et al.* in view of Hewinson *et al.* and Treiber, and in further view of Kakuishi (U.S. Patent No. 5,287,406). Applicants traverse the rejection of claims 4, 5, 8, 14 and 15 at least for the reasons set forth below.

The Examiner acknowledges that the combination of Amrany *et al.*, Hewinson *et al.* and Treiber does not disclose that the tunable passive elements are tuned such that the balance impedance is as close as possible to the scaled impedance. *See* page 5 of the February 9, 2004 Final Office Action. The Examiner alleges that Kakuishi supplies the necessary disclosure to overcome the acknowledged deficiencies of the combination of Amrany *et al.*, Hewinson *et al.* and Treiber. Kakuishi discloses, *inter alia*, using an adder circuit to cancel a return echo. *See* col. 3, lines 30-31 of Kakuishi.

With respect to claim 4, the combination of Amrany *et al.*, Hewinson *et al.*, Treiber and Kakuishi fail to teach or suggest a hybrid bridge comprising tunable passive impedances having a tunable balance impedance, wherein the value of the tunable balance impedance approximates a scaled impedance value of a parallel circuit comprising the line termination resistance in transmission paths of the hybrid bridge and a line impedance. As noted above, the Examiner has acknowledged that Amrany *et al.*, Hewinson *et al.* and Treiber fail to teach or suggest the recitations of claim 4, which incorporates all the recitations of claim 1. Therefore, the Examiner must rely upon Kakuishi to supply the necessary disclosure. However, combining Kakuishi with Amrany *et al.*, Hewinson *et al.* and Treiber still fails to teach or suggest the invention recited in claim 4 since none of the references teach or suggest measuring the input and output

transmission voltages in order to determine the transmission return loss gain. While Kakuishi discloses a formula related to line impedances, the Examiner has not pointed to any teaching or suggestion in Kakuishi, Amrany *et al.*, Hewinson *et al.* or Treiber that discloses a parallel circuit comprising the line termination resistance in transmission paths of the hybrid bridge and a line impedance. Moreover, the Examiner has not pointed to any teaching or suggestion in Kakuishi, Amrany *et al.*, Hewinson *et al.* or Treiber that discloses the setting the value of a tunable balance impedance to approximate a scaled impedance in the aforementioned parallel circuit. Finally, the combination of Kakuishi, Amrany *et al.*, Hewinson *et al.* or Treiber does not disclose a digital control means for controlling the tunable passive elements of a hybrid, nor does the combination disclose the measurement of input and output transmission voltages to determine transmission return loss gain. Thus, Applicants submit that the Examiner cannot fulfill the “all limitations” prong of a *prima facie* case of obviousness, as required by *In re Vaeck*.

Since neither Kakuishi, Amrany *et al.*, Hewinson *et al.* nor Treiber disclose a tunable balance impedance to approximate a scaled impedance in a parallel circuit comprising the line termination resistance in transmission paths of the hybrid bridge and a line impedance, Applicants submit that one of skill in the art would not be motivated to combine the four references. Although the Examiner provides a motivation analysis with respect to manufacturing a lower-cost hybrid bridge circuit, Kakuishi, Amrany *et al.*, Hewinson *et al.* and Treiber lack any teaching about the desirability of a tunable balance impedance to approximate a scaled impedance in a parallel circuit comprising the line termination resistance in transmission paths of the hybrid bridge and a line impedance. The combination further lacks any motivation with

respect to measuring input and output transmission voltages in order to determine a transmission return loss gain. Thus, Applicants submit that the Examiner cannot fulfill the motivation prong of a *prima facie* case of obviousness, as required by *In re Dembiczak* and *In re Zurko*.

Based on the foregoing reasons, Applicants submit that the combination of Kakuishi, Amrany *et al.*, Hewinson *et al.* and Treiber fails to disclose all of the claimed elements as arranged in claim 4. Therefore, the combination of Kakuishi, Amrany *et al.*, Hewinson *et al.* and Treiber clearly cannot render the present invention obvious as recited in claim 4. Thus, Applicants submit that claim 4 is allowable, and further submit that claim 5 is allowable as well, at least by virtue of its dependency from claim 4. Applicants respectfully request that the Examiner withdraw the § 103(a) rejection of claims 4 and 5.

Claims 8, 14 and 15 depend from claim 6, and therefore incorporate all the recitations of claim 6 by virtue of their dependency.

The combination of Kakuishi, Amrany *et al.*, Hewinson *et al.* and Treiber does not teach or suggest all of the claimed elements as arranged in claim 6, and included in claims 8, 14 and 15 via dependency. Specifically, the combination fails to disclose a digital control means for controlling the tunable passive elements of a hybrid, as Kakuishi lacks any teaching about a tunable balance impedance to approximate a scaled impedance in a parallel circuit comprising the line termination resistance in transmission paths of a hybrid bridge and a line impedance. Kakuishi further lacks any disclosure with respect to measuring input and output transmission voltages of a hybrid in order to determine a transmission return loss gain. *See* the above discussion with respect to claims 1 and 6. Applicants submit that the Examiner cannot fulfill the

“all limitations” and motivation prongs of a *prima facie* case of obviousness for at least the same reasons as discussed above with respect to claims 1 and 6. Applicants respectfully request that the Examiner withdraw the § 103(a) rejection of claims 8, 14 and 15.

4. Claims 9-13 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Amrany *et al.* in view of Hewinson *et al.*, Treiber and Kakuishi, and in further view of McGinn (U.S. Patent No. 5,333,192). Applicants traverse the rejection of claims 9-13 at least for the reasons set forth below.

The Examiner acknowledges that the combination of Amrany *et al.*, Hewinson *et al.*, Treiber and Kakuishi do not teach or suggest a hybrid bridge having two branches each comprising a tunable balance impedance with a second tunable impedance. *See* page 6 of the February 9, 2004 Final Office Action. The Examiner alleges that McGinn supplies the necessary disclosure to overcome the acknowledged deficiencies of Amrany *et al.*, Hewinson *et al.*, Treiber and Kakuishi. McGinn discloses, *inter alia*, using a resistor bridge having identical branches. *See, e.g.*, Figure 2 of McGinn. Applicants note that McGinn was not cited for any teaching of parallel circuits, tunable passive elements or line termination resistances.

Claims 9-13 depend from claim 6, and therefore incorporate all the recitations of claim 6 by virtue of their dependency.

The combination of Amrany *et al.*, Hewinson *et al.*, Treiber, Kakuishi and McGinn does not teach or suggest all of the claimed elements as arranged in claim 1, and included in claims 9-13 via dependency. Specifically, the combination fails to disclose a digital control means for

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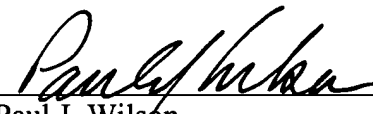
controlling the tunable passive elements of a hybrid, as McGinn contains no teaching or suggestion on controlling the tunable passive elements with a digital control means, and McGinn further lacks any disclosure with respect to measuring input and output transmission voltages of a hybrid in order to determine a transmission return loss gain. *See* the above discussion with respect to claims 1 and 6. Applicants submit that the Examiner cannot fulfill the “all limitations” and motivation prongs of a *prima facie* case of obviousness for at least the same reasons as discussed above with respect to claims 1 and 6. Applicants respectfully request that the Examiner withdraw the § 103(a) rejection of claims 9-13.

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In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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